

WHAT IS CLAIMED IS:

1. A method of managing critical resource usage comprising:
monitoring queue depth in at least one critical resource queue for a predetermined high level of resource consumption;
preventing subsequent commands of a client/server combination in response to a command that increases resource consumption to the predetermined high level;
queuing an identifier of the client/server combination on a waiting queue;
removing the client/server combination identifier from the waiting queue in queuing order as resource consumption declines; and
re-enabling commands of the client/server combination.
2. The method according to Claim 1 further comprising:
managing critical resource usage for clients that require a specific resource.
3. The method according to Claim 1 further comprising:
enabling commands of a client/server combination in order of queuing as resource availability is restored.
4. The method according to Claim 1 further comprising:
receiving a command from a client to a server that increases consumption of a resource to a high consumption condition;
setting a flag indicative of a critical condition of the resource;
allowing the command to complete; and
rejecting subsequent commands issued by the client to the server.
5. The method according to Claim 1 further comprising:
detecting an increase in consumption of a resource to a level above a preselected limit; and
queuing an identifier of the client/server combination on a waiting queue associated with the resource.

6. The method according to Claim 5 further comprising:
detecting a decline in consumption of the resource;
removing a client/server combination identifier from the waiting queue in the
queue order; and
enabling subsequent commands of the client/server combination removed from
the waiting queue.

7. The method according to Claim 1 implemented in a storage system further
comprising:

at least one storage controller;
at least one host adapter operational as a client;
at least one storage array configured as physical storage and logical storage, the
logical storage being arranged in logical units (LUNs) operational as
servers;
at least one adapter/LUN combination operational as a client/server combination;
and
at least one resource selected from a group consisting of dynamic caching
structures, queues, buffers, and remote copy resources.

8. A storage system comprising:
at least one storage controller capable of controlling data transfers between at least
one host adapter and at least one storage array configured as physical
storage and logical storage, the logical storage being arranged in logical
units (LUNs);
at least one resource utilized in the data transfers;
at least one critical resource queue respectively associated with the at least one
resource and capable of queuing accesses to the associated resource; and
a logic that monitors the at least one critical resource queue for a predetermined
high consumption condition, identifies an adapter/LUN combination
associated with a command that contributes to the high consumption
condition, queues the identified adapter/LUN combination on a waiting
queue, and prevents subsequent commands of the identified adapter/LUN
combination.

9. The storage system according to Claim 8 further comprising:
a logic that detects a decline in resource consumption, dequeues the adapter/LUN combination identifier from the waiting queue, and re-enables commands of the dequeued adapter/LUN combination.
10. The storage system according to Claim 8 further comprising:
at least one resource selected from a group consisting of dynamic caching structures, queues, buffers, and remote copy resources.
11. The storage system according to Claim 8 further comprising:
a logic that manages critical resource usage for host adapters that require a specific resource.
12. The storage system according to Claim 8 further comprising:
a logic that detects receipt of a command from an adapter to a LUN that increases consumption of a resource above a preselected limit, sets a flag indicative of a critical condition of the resource, allows the received command to complete, and rejects subsequent commands issued by the adapter to the LUN.
13. The storage system according to Claim 8 further comprising:
a logic that detects an increase consumption of a resource above the preselected limit, and queues an identifier of the adapter/LUN combination on a waiting queue associated with the resource.
14. The storage system according to Claim 13 further comprising:
a logic that detects a decline in consumption of the resource, removes an adapter/LUN combination identifier from the waiting queue in the queue order, and enables subsequent commands of the adapter/LUN combination removed from the waiting queue.

15. A data handling system comprising:
at least one controller capable of controlling data transfers between at least one client and at least one server;
at least one resource utilized in the data transfers;
at least one critical resource queue respectively associated with the at least one resource and capable of queuing accesses to the associated resource; and
a logic that monitors the at least one critical resource queue for a predetermined high consumption condition, identifies a source/client combination associated with a command that contributes to the high consumption condition, queues the identified source/client combination on a waiting queue, and prevents subsequent commands of the identified source/client combination.
16. The system according to Claim 15 further comprising:
a logic that detects receipt of a command from a client to a server that increases consumption of a resource above a preselected limit, sets a flag indicative of a critical condition of the resource, allows the received command to complete, and rejects subsequent commands issued by the client to the server.
17. The system according to Claim 15 further comprising:
a logic that detects an increase in consumption of a resource above the preselected limit, queues an identifier of the client/server combination on a waiting queue associated with the resource.
18. The system according to Claim 17 further comprising:
a logic that detects a decline in consumption of the resource, removes a client/server combination identifier from the waiting queue in the queue order, and enables subsequent commands of the client/server combination removed from the waiting queue.

19. An article of manufacture comprising:
a controller usable medium having a computable readable program code embodied therein for managing critical resource usage, the computable readable program code further comprising:
a code capable of causing the controller to monitor for a predefined high level of resource consumption;
a code capable of causing the controller to prevent subsequent commands of a client/server combination in response to a command that increases resource consumption to the predefined high level;
a code capable of causing the controller to queue an identifier of the client/server combination on a waiting queue;
a code capable of causing the controller to remove the client/server combination identifier from the waiting queue in queuing order as resource consumption declines; and
a code capable of causing the controller to enable commands of the client/server combination.

20. The article of manufacture according to Claim 19 further comprising:
a code capable of causing the controller to manage critical resource usage for clients that require a specific resource;
a code capable of causing the controller to receive a command from a client to a server that increases consumption of a resource above a preselected limit;
a code capable of causing the controller to set a flag indicative of a critical condition of the resource;
a code capable of causing the controller to allow the command to complete; and
a code capable of causing the controller to reject subsequent commands issued by the client to the server.

21. The article of manufacture according to Claim 19 further comprising:
a code capable of causing the controller to detect an increase in consumption of a resource above a preselected limit;
a code capable of causing the controller to queue an identifier of the client/server combination on a waiting queue associated with the resource;

a code capable of causing the controller to detect a decline in consumption of the resource;

a code capable of causing the controller to remove a client/server combination identifier from the waiting queue in the queue order; and

a code capable of causing the controller to enable subsequent commands of the client/server combination removed from the waiting queue.